

REMARKS

The Official action mailed 14 March 2008, has been received and its contents carefully noted. The pending claims, claims 1-8, were rejected. By this amendment, claims 1-5 have been amended, claims 6-8 have been canceled and claims 9-11 have been added. Support may be found in the specification and the claims as originally filed. No statutory new matter has been added. Therefore, reconsideration and entry of the claims as amended are respectfully requested.

Claim Amendments

Claims 1-5 have been amended to further distinguish the claimed compound from the cited art. Specifically, claims 1-5 have been amended to delete NR₉ as a B substituent and delete -W-R₂ as an R₅ substituent in the general formula (I).

The remaining amendments to the claims have been made to improve readability and conformity with U.S. claims practice. The remaining amendments are not intended to change or narrow the scope and meaning of the claims. The remaining amendments are not intended to forfeit any available equivalents under the Doctrine of Equivalents.

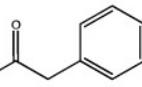
Rejection under 35 U.S.C. 103(a)

The Examiner rejected claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Hayase (JP 04182461 A) in view of O'Mahony (US 6,034,121) and Fischer (US 6,906,007). Specifically, the Examiner deemed that it would have been obvious to select a compound of formula (I) and then modify the coumarin ring by adding a substituent, such as in O'Mahony. The Examiner then cited Fischer for teaching that similar coumarins are useful as fungicides.

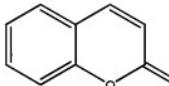
With inventions involving new chemical compounds, it is necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish *prima facie* obviousness of the new claimed compound. See *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, No. 06-1329 (Fed. Cir. 2007). Applicants respectfully submit that a *prima facie* case of obviousness of the claimed compound has not been established. Specifically, the Examiner does not provide any logical reasoning as to why one would select compound 51 of Hayase over the other 58 compounds exemplified in Hayase and then modify the compound 51 with specific substituents at specific locations to result in a compound of

formula (I) as recited in the instant claims.

The compounds of Hayase are directed to phenylacetamide compounds. Thus, the primary



backbone of the compounds of Hayase is phenylacetamide, i.e. $\text{H}_2\text{N}-\text{C}(=\text{O})-\text{CH}_2-\text{Ph}$. Compound 51 of Hayase is the only compound among 58 other compounds which has coumarin



(i.e. benzopyranone, as a substituent to result in the backbone of structural formula (I) of the claimed invention.

Hayase, however, does not disclose or suggest any bioactivity for compound 51. Thus, a person having ordinary skill in the art would not have reasonable expectation that compound 51 or derivatives thereof would exhibit insecticidal or fungicidal activity or even *any* bioactivity. Since one of ordinary skill in the art would not even know whether compound 51 would exhibit bioactivity or not, a person skilled in the art would not have looked to the cited patents, O'Mahony and Fisher to determine how to make compound 51 into a compound which has insecticidal or fungicidal properties with various substituents.

Since Hayase does not provide any bioactivity data for compound 51, there is no motivation to modify compound 51 with any substituents such as those provided in O'Mahony and Fisher. Thus, the requisite motivation to combine Hayase with O'Mahony and Fisher to result in a compound having structural formula (I) is lacking and a *prima facie* case of obviousness has not been established. Therefore, the rejection under 35 U.S.C. 103(a) should properly be withdrawn.

Even the disclosures of Hayase, O'Mahony and Fisher were combined, one of ordinary skill in the art would not have been motivated to piece together the various compounds and functional groups with a reasonable likelihood of success in obtaining a compound having structural formula (I) which exhibits fungicidal and insecticidal activity.

O'Mahony only generally discloses some benzopyranone compounds with some substituted groups which have fungicidal activity. O'Mahony, however, does not provide any

reasoning or evidence identifying particular substituents and locations in the compounds will result in fungicidal and insecticidal activity. Although Fisher discloses some compounds which have insecticidal activity, the compounds of Fisher have no benzopyranone moiety. Since the compounds of Fisher have no benzopyranone moiety, one of ordinary skill in the art would expect that the compounds of Fisher and the claimed compounds would exhibit significantly different bioactivities despite having similar substituents. Thus, Applicants respectfully submit that even the combination of Hayase, O'Mahony and Fisher does not provide the requisite motivation for one of ordinary skill in the art to pick a particular backbone structure and particular substituents at particular places in the structure in order to arrive at the claimed compound. Therefore, the rejection under 35 U.S.C. 103(a) should properly be withdrawn.

Unexpected Results

Applicants respectfully submit that the compounds of formula (I) as claimed provides unexpected results such that the claimed compounds are unobvious. Specifically, Hayase does not disclose or suggest any bioactivity for compound 51. O'Mahony discloses in a general way that substituents on coumarin rings may exhibit fungicidal properties, but O'Mahony does not teach or suggest which substituents over others will result in fungicidal properties. Fisher discloses some substituents on a particular dihydropyranone backbone which results in some fungicidal activity (only level 2 or more at 500 ppm).

The present inventors, through a significant amount of creative innovation and experimentation (including the molecule design and modification, synthesis of a significant number of compounds having similar structures, and screening biological activities), found that compounds having general formula (I) as claimed, not only have good fungicidal activity, but also have good insecticidal activity. Some of the compounds of the present invention were tested and compared with compound 51 of Hayase. The results provided on page 26, Table 3, of the Specification as follows:

Comparision of fungicidal activity against cucumber downy mildew (50 ppm)

Compound	1	2	5	6	12	26	37	52	402	405	409	414	JP51
control(%)	100	100	100	100	100	100	100	100	100	100	100	100	20

show that the compounds of the present invention exhibit significantly more fungicidal activity as compared with compound 51.

Nowhere do the cited references, alone or in combination, teach or suggest that compounds of the structural formula (I) as claimed will exhibit fungicidal and insecticidal activity that is significantly more than the activities of compounds known in the art. Therefore, the claimed invention is unobvious and the rejection under 35 U.S.C. 103(a) should properly be withdrawn.

Request for Interview

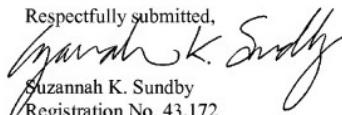
Either a telephonic or an in-person interview is respectfully requested should there be any remaining issues.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Official action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. 1.136(a), and any fees required therefor are hereby authorized to be charged to **Deposit Account No. 02-4300**, Attorney Docket No. **034226.002**.

Respectfully submitted,



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Date: 13 June 2008
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